

### **REMARKS**

In response to the above-identified Notice of Non-Compliant Amendment and Office Action, Applicants amend the Application and seek reconsideration in view of the following remarks. In this Response, Applicants cancel claims 2-3, 10-11, and 34-40, such that claims 1-40 have each been cancelled. Applicants add new claims 41-73, which are claims 1-33, respectively, reinstated.

#### **I. Objection to the Drawings**

The drawings stand objected to for failing to show all of the features described in the specification. Specifically, the Patent Office points out that the drawings fail to show “a processor in the cache,” as described in the specification. Applicants have amended the specification to delete the description of “a processor in the cache.” Therefore, Applicants submit that the drawings show all of the features described in the specification. Accordingly, Applicants respectfully request withdrawal of the objection to the drawings.

#### **II. Objection to the Specification**

The specification stands objected to as failing to provide proper antecedent basis for the claimed subject matter. Specifically, the Patent Office points out that the specification does not support the elements of a cache “configured to,” “adapted to,” “function,” or “operate” as a controller, recited in claims 1, 14, 26, 28, 30 and 32. Applicants have cancelled claims 1, 14, 26, 28, 30 and 32. Accordingly, Applicants respectfully request withdrawal of the objection to the specification.

#### **III. Claim Objections**

Claim 27 stands objected to because it depends from itself. Applicants have cancelled claim 27, which renders moot the objection of claim 27.

**IV. Claims Rejected Under 35 U.S.C. § 112**

Claims 1-33 stand rejected under 35 U.S.C. § 112, first paragraph as failing to comply with the written description requirement. Applicants have cancelled claims 1-33, which renders moot the rejection of claims 1-33 under 35 U.S.C. § 112, first paragraph.

**V. Claims Rejected Under 35 U.S.C. § 102**

**A. Anticipated by Hicken**

Claims 1-8, 12-21, and 25, which are now claims 41-48, 52-61, and 65, respectively, stand rejected under 35 U.S.C. § 102(e) as being anticipated by U.S. Patent Application Publication No. 2004/0153727 filed by Hicken et al. ("*Hicken*"). Applicants respectfully traverse the rejection.

To anticipate a claim, the cited reference must disclose each and every element of the rejected claim (*see* MPEP § 2131). Among other elements, independent claim 41 recites the elements of: "**detecting an inability of the second cache** to retrieve data from or store data at the first part of the first range of LAs" (emphasis added). Applicants submit that *Hicken* fails to disclose at least these elements of claim 41.

In making the rejection, the Patent Office alleges that the detection of a failure in a storage controller, as disclosed in *Hicken*, is the same as detecting a failure in the cache itself (*see* Paper No./Mail Date 08120810808561, page 7, citing *Hicken*, paragraph [0042], lines 7-9). Applicants respectfully disagree with the Patent Office.

Applicants submit that a failure in a storage controller does not necessarily mean that a **cache** associated with the failed storage controller is unable to operate (e.g., retrieve and/or store data). That is, in configurations, such as *Hicken*, that utilize redundant storage controllers, the cache is able to function even when the primary storage controller fails because a secondary storage controller is configured to back-up the failed storage controller, which allows the cache to continue operating. In other words, detection of a failed storage controller is not the equivalent to detection a failed cache because to correct the situation (and eliminate the detection of a failure); the storage controller needs to be repaired or replaced, not the cache. Therefore, *Hicken* fails to disclose at least the elements of: "detecting an inability of the second

cache to retrieve data from or store data at the first part of the first range of LAs,” as recited in claim 41 because *Hicken* only discloses detecting the failure of a storage controller, not a cache.

The failure of *Hicken* to disclose each and every element of claim 41 is fatal to the anticipation rejection. Therefore, claim 41 is not anticipated by *Hicken*. Accordingly, Applicants respectfully request withdrawal of the rejection of independent claim 41.

Regarding the rejection of claims 42-48 and 52-53, claims 42-48 and 52-53 depend from claim 41 and include all of the elements thereof. Therefore, Applicants submit that claims 42-48 and 52-53 are not anticipated by *Hicken* at least for the same reasons as claim 41, in addition to their own respective features. Accordingly, Applicants respectfully request withdrawal of the rejection of claims 42-48 and 52-53.

Applicants submit that claims 54-61 and 65 each recite elements similar to claim 41 discussed above. Therefore, Applicants submit that claims 54-61 and 65 are not anticipated by *Hicken* at least for the same reasons as claim 41, in addition to their own respective features. Accordingly, Applicants respectfully request withdrawal of the rejection of claims 54-61 and 65.

#### **B. Anticipated by Henry**

Claims 26-33, which are now claims 66-73, respectively, stand rejected under 35 U.S.C. § 102(e) as being anticipated by U.S. Patent No. 6,898,666 issued to Henry et al. (“*Henry*”). Applicants respectfully traverse the rejection because 1) the Patent Office has failed to establish a prima facie case of anticipation; and 2) Henry fails to disclose each and every element of claims 26-33.

##### **1) Failure to Establish a *Prima Facie* Case of Anticipation**

MPEP § 2131 states that “A claim is anticipated only if each and every element as set forth in the claim is found, either expressly or inherently described, **in a single prior art reference**” (citing *Verdegaal Bros. v. Union Oil Co. of California*, 814 F.2d 628, 631, 2 USPQ2d 1051, 1053 (Fed. Cir. 1987), emphasis added). Applicants submit that the Patent Office’s rejection of claims 26-33 is not proper under 35 U.S.C. § 102.

In making the rejection, the Patent Office cites Henry as disclosing the elements of:

one or more mass storage devices, coupled to store data at respective first ranges of logical addresses (LAs);

a plurality of interim fast-access-time caches, each of the plurality of interim fast-access-time caches comprising software and configured to operate substantially independently of one another, each interim fast-access-time cache being assigned a respective second range of the LAs and coupled to receive data from and provide data to the one or more mass storage devices having LAs within the respective second range; [and]

one or more interfaces, which are adapted to receive input/output (IO) requests from host processors directed to specified LAs and to direct all the IO requests to the interim fast-access-time cache to which the specified LAs are assigned.

The Patent Office then cites paragraph [0044] of *Hicken* as disclosing the elements of: “a further plurality of interim fast-access-time caches adapted to be configured to be assigned the respective second range of the LAs and coupled to receive data from and provide data to the one or more mass storage devices having LAs within the respective second range when any interim fast-access-time cache fails,” similar to the rejection of claims 41-48, 52-61, and 65 discussed above (*see Paper No./Mail Date 08120810808561*, pages 14-15 for claims 66-67, page 16 for claims 68-69, page 17 for claims 70-71, and page 18 for claims 72-73). Applicants submit that a rejection of claims 66-73 based on a combination of references is improper under 35 U.S.C. § 102. Therefore, Applicants submit that the Patent Office has failed to establish a *prima facie* case of anticipation of claims 66-73 under 35 U.S.C. § 102(e).

## **2) Failure to Disclose Each and Every Element of Claims 66-73**

To anticipate a claim, the cited reference must disclose each and every element of the rejected claim (*see MPEP § 2131*). Among other elements, independent claim 66 recites the elements of: “a further plurality of interim fast-access-time caches adapted to be configured to be assigned the respective second range of the LAs and coupled to receive data from and provide data to the one or more mass storage devices having LAs within the respective second

range when any interim fast-access-time cache fails.” Applicants submit that *Henry* fails to disclose at least these elements of claim 66.

In making the rejection, the Patent Office does not cite *Henry* as disclosing the elements of: “a further plurality of interim fast-access-time caches adapted to be configured to be assigned the respective second range of the LAs and coupled to receive data from and provide data to the one or more mass storage devices having LAs within the respective second range when any interim fast-access-time cache fails,” as recited in claim 66 since the Patent Office cites paragraph [0044] of *Hicken* as disclosing such elements. Moreover, in reviewing *Henry*, Applicants are unable to discern any sections of *Henry* disclosing such elements. Therefore, *Henry* fails to disclose each and every element of claim 66.

The failure of *Henry* to disclose each and every element of claim 66 is fatal to the anticipation rejection. Therefore, claim 66 is not anticipated by *Henry*. Accordingly, Applicants respectfully request withdrawal of the rejection of independent claim 66.

Claim 67 depends from claim 66 and includes all of the elements thereof. Therefore, Applicants submit that claim 67 is not anticipated by *Henry* at least for the same reasons as claim 66, in addition to its own features. Accordingly, Applicants respectfully request withdrawal of the rejection of claim 67.

Applicants submit that claims 68-73 each recite elements similar to claim 66 discussed above. Therefore, Applicants submit that claims 68-73 are not anticipated by *Henry* at least for the same reasons as claim 66, in addition to their own respective features. Accordingly, Applicants respectfully request withdrawal of the rejection of claims 68-73.

## **VI. Claims Rejected Under 35 U.S.C. § 103**

Claims 9-11 and 22-24, which are now claims 49-51 and 62-64, respectively, stand rejected under 35 U.S.C. § 103(a) as being obvious over *Hicken* in view of the article “Consistent Hashing and Random Trees: Distributed Caching Protocols for Relieving Hot Spots on the World Wide Web,” in the Proceedings of the 29<sup>th</sup> ACM Symposium on Theory of Computing, pages 654-663 authored by Karger et al. (“*Karger*”). Applicants respectfully traverse the rejection.

To render a claim obvious, the cited references must teach or suggest each and every element of the rejected claim (*see* MPEP § 2143). Claims 49-51 and 62-64 depend from claims 41 and 54, respectively and include all of the elements thereof. In rejecting claims 49-51 and 62-64, the Patent Office characterizes *Hicken* similar to the rejection of claims 41 and 54 discussed above. Applicants have discussed above the failure of *Hicken* to disclose at least the elements of: “detecting an inability of the second cache to retrieve data from or store data at the first part of the first range of LAs,” as recited in claim 41 and similarly recited in claim 54, and submit that such discussion is equally applicable to claims 49-51 and 62-64 because of their respective dependencies from claims 41 and 54. Therefore, *Hicken* fails to teach or suggest each and every element of claims 49-51 and 62-64. The Patent Office relies on the disclosure in *Karger* to cure the defects of *Hicken*; however, Applicants submit that *Karger* fails to cure such defects.

In making the rejection, the Patent Office does not cite *Karger* as teaching or suggesting the elements of: “detecting an inability of the second cache to retrieve data from or store data at the first part of the first range of LAs,” as recited in claims 49-51 (via claim 41) and similarly recited in claims 62-64 (via claim 54). Moreover, in reviewing *Karger*, Applicants are unable to discern any sections of *Karger* teaching or suggesting such elements. Therefore, *Karger* fails to cure the defects of *Hicken*.

The failure of the combination of *Hicken* and *Karger* to teach or suggest each and every element of claims 49-51 and 62-64 is fatal to the obviousness rejection. Therefore, claims 49-51 and 62-64 are not obvious over *Hicken* in view of *Karger*. Accordingly, Applicants respectfully request withdrawal of the rejection of claims 49-51 and 62-64.

## **VII. Miscellaneous**

Applicants submit that new claims 41-73 each overcome the objections to the drawings and the specification discussed above with respect to claims 1-33 since claims 41-73 do not recite the elements of a cache “configured to,” “adapted to,” “function,” or “operate” as a controller. Moreover, Applicants submit that new claims 41-73 each overcome the rejection under 35 U.S.C. § 112, first paragraph discussed above with respect to claims 1-33 since claims 41-73 do not recite the elements of a cache “configured to,” “adapted to,” “function,” or “operate” as a controller.

**CONCLUSION**

In view of Applicants' amendments and remarks, it is respectfully submitted that the Patent Office's rejections have been overcome. Accordingly, Applicants respectfully submit that the Application, as amended, is now in condition for allowance, and such allowance is therefore earnestly requested. Should the Patent Office have any questions or wish to further discuss this Application, Applicants request that the Patent Office contact the Applicants' attorney at the below-listed telephone number.

If for some reason Applicants have not requested a sufficient extension and/or have not paid a sufficient fee for this response and/or for the extension necessary to prevent abandonment on this Application, please consider this as a request for an extension for the required time period and/or authorization to charge Deposit Account No. 090449 for any fee which may be due.

Respectfully submitted,

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